

YSI Technology Used to Monitor Source Water Before Reaching Treatment Plants in NYC



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YSI Unattended Monitoring
Application Note A507-02

Source water quality is monitored prior to withdrawal into the drinking water treatment process. Water quality affects the efficiency of water treatment processes, as well as informs facility operators as to how processes must be adjusted to adequately treat incoming water. Source water quality monitoring is also important as a source of data that over time can be used for trending and developing correlations between water quality and treatment requirements. EPA Source Water Protection Guidelines require that each state identifies and assesses threats to its water supply sources. For years, each state has been required to submit a report to the Source Water Protection Office. With continuous monitoring, water treatment issues that are season-specific - i.e., summer algal blooms; or event-specific, i.e., heavy storms and consequent turbidity, can be characterized and treatment contingencies developed.

Systems (DAS) designed to continuously monitor water quality in two upstate reservoirs that are part of a system that provides source water to New York City and other areas of the state of New York.

NYCDEP uses six DAS's mounted on YSI buoys. Each of NYCDEP's water quality stations includes up to three YSI multiparameter sondes that measure temperature, dissolved oxygen, conductivity, specific conductance, pH, depth, and turbidity. The sondes are integrated with the DAS and are suspended at different depths to more accurately represent water quality in vertical profile. Solar panels and an on-board battery pack provide ample power for the sondes, spread spectrum transceiver, and datalogger to function reliably and autonomously. Water quality data are stored within the dataloggers as well as transmitted via spread spectrum radio to a Signal Conditioning and Data Acquisition (SCADA) system that provides data in real-time to water treatment facility operators. The SCADA system monitors water quality data using established criteria and performs automated functions such as actuating alert messages or alarms, based on water quality data provided by the continuous DAS.

Under normal conditions, the sondes make measurements every 15 minutes. However, operators can remotely adjust sampling frequency at any site and with any sonde to more carefully investigate water quality within those reservoirs. The stations and sondes are inspected and the sondes recalibrated once per month. Gathering real-time data has helped NYCDEP improve their water quality monitoring program.



YSI Data Buoy Deployment

New York City Department of Environmental Protection (NYCDEP) wanted to upgrade its source water monitoring system and increase collection of real-time data. In some areas, technicians had been performing manual measurements in remote locations as often as once each day. NYCDEP started using buoy-based YSI Data Acquisition

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